

Trend Study 13A-1-99

Study site name: Two Mile Chaining .

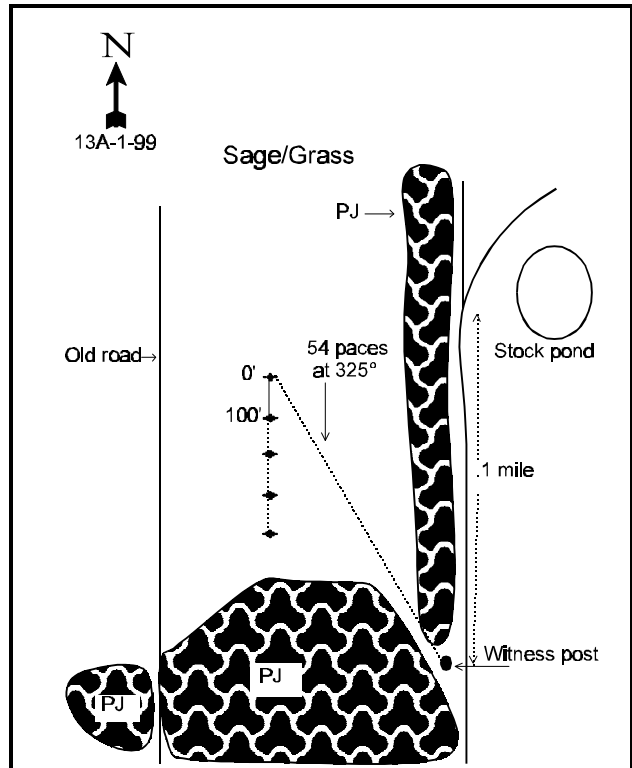
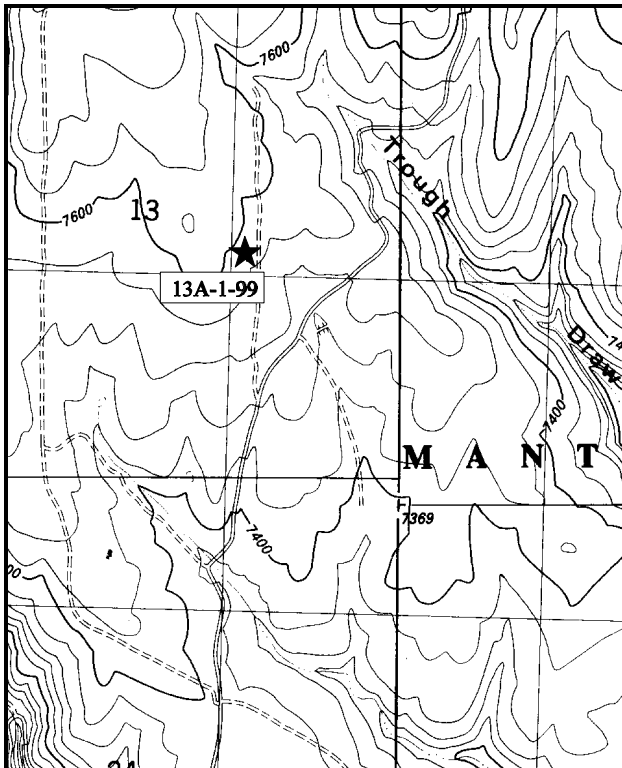
Range type: Chained, Cabled, Seeded P-J .

Compass bearing: frequency baseline 165°M.

Footmark (first frame placement) 5 feet, footmarks (frequency belts) line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

LOCATION DESCRIPTION

Travel east on SR 46 through the town of LaSal to mile marker 16. Continue 0.1 miles, then turn left off the highway. Proceed 1.2 miles to a fork. Turn right and proceed toward Buckeye Reservoir for 0.8 miles to another fork. Stay left and continue 2.95 miles to a witness post (fencepost) on the left side of the road. The transect is located in the chaining opposite a fork further up the road and can be reached from the witness post by walking 54 paces northwest (325°). The 0-foot baseline stake is a 1-foot tall fencepost, tagged #7813.



Map Name: Ray Mesa

Diagrammatic Sketch

Township 28S , Range 25E , Section 13

UTM 4247895.620 N, 665143.632 E

DISCUSSION

Trend Study No.13A -1 (33-1)

This study is located in the Two Mile Chaining on the south end of the LaSal Mountains. Nine hundred acres were chained and seeded in 1978. This Forest Service chaining is thought to be important as spring/fall transition big game range and is becoming increasingly important as elk winter range. During the 1994 surveys, elk pellet groups occurred twice that of deer. The data from 1999 continues to show this same trend with 32 deer days use/acre (79 ddu/ha) and 70 elk days use/acre (173 edu/ha). The allotment also receives summer/fall cattle use. The site is dominated by mountain big sagebrush and many other useful browse species. Grasses, especially seeded species, are an important vegetative component on the site.

The study site is characterized by long, gently sloping foothills, generally with a southeast aspect and an elevation of 7,650 feet. Slope of study area is a gentle 4%. The soil is a loam with a slightly acidic pH (6.5) and an effective rooting depth of 11 inches. Phosphorus could be a limiting factor on this site with only 8ppm, as at least 10ppm is necessary for normal plant development. Organic matter appears to be well below average (2%). The sites in this herd unit average 3.5% organic matter. Erosion potential is low to moderate.

Mountain big sagebrush is the dominant browse species on the site. It made up 60% of the total browse cover in 1994, however it currently only makes up 39%. Low rabbitbrush is more than twice as abundant as the sagebrush, but only contributes 13% (1994) and 21% (1999) of the total browse cover. The moderately dense sagebrush population is composed mainly of light to moderately hedged mature plants. The proportion of the plants that are moderately hedged has increased from 13% (1994) to where it is currently at 41%. The biotic potential (proportion of seedlings to population) was quite high in 1994 (16%), and is still fairly good at 8% in 1999. In 1987, there were no seedlings sampled. The proportion of decadent plants in the population had risen from 13% (1987) to 42% in 1994. However, it has currently gone down to 24%. These changes in percent decadency are not necessarily the result of utilization, because no more than 3% the population in any year, has shown heavy use. The extended drought the state has experienced since 1985, is considered the major cause of this downward trend. Other desirable browse species are less common on the site. These species would include bitterbrush, serviceberry, snowberry, and mountain mahogany which are more common near the edge of the chaining. Scattered oak clumps are vigorous and show light to moderate hedging.

Herbaceous species diversity is high and plants are vigorous. Seeded grasses are well established and productive. Overall, crested wheatgrass was the most abundant seeded species, making up 21% of the grass cover in 1994. It has currently gone down to 18% of the total grass cover. Bulbous bluegrass, intermediate wheatgrass, and smooth brome are also important cover species. Silvery lupine was the dominant forb in 1994 (67% of the forb cover). It currently only makes up 3% of the forb cover. Some individual plants have been damaged by insects. Other forbs provide some green forage in the spring. The number of forb species have fluctuated over the years from 16 (1987), 12 (1994), and 16 (1999).

Overall, protective ground cover is good, although patches of bare soil account for 30% of the soil surface. Rock and pavement does not contribute very much to the ground cover on this site (<0.1%). Percent litter cover has decreased steadily since 1987, although this has occurred on all sites because of the extended drought for most years since 1985.

1994 TREND ASSESSMENT

The trend for soils would be slightly down because of the increase in the amount of bare soil (now 32%) and the decrease in percent litter cover (from 61% to 46%). However, there does not appear to be a problem with soil erosion because of the high amounts of grass cover and fairly level terrain. Trend for the key browse species is stable to slightly down. Mountain big sagebrush makes up 61% of the browse cover with a population of 4,800 plants/acre, but the trend for decadency should be watched closely to see if this trend

continues because there is a ratio of 1:40 (one dead plant to every 40 live plants). As the rate of percent decadency increases, there are going to be more dead plants in the population. With the low percentage of plants that are being heavily browsed (only 1%), this increased decadency has most likely been caused by the extended drought and associated winter injury. The trend for the herbaceous understory is easier to interpret as the nested frequency values for both the grasses and forbs have significantly decreased since 1987. Again, this has basically been caused by the prolonged drought.

TREND ASSESSMENT

soil - down slightly

browse - stable to slightly down

herbaceous understory - down

1999 TREND ASSESSMENT

The trend for soils is actually slightly up at this time with decreases in percent bare soil and the ratio of protective cover vs bare soil has improved from 2.8 to 3.3. Soil erosion still does not appear to be a problem because of the relatively large amounts of protective cover and gentle terrain. Trend for the key browse species is slightly down even with the improvement in percent decadence from 42% to 24%. Mountain big sagebrush made up 61% of the browse cover in 1994, now it only makes up 39% of the cover. It has also experienced a loss in numbers since 1994 (4,800 plants/acre), currently down to 4,080 plants/acre. The ratio of dead to live plants has also increased from 1:40 (2%) to now where it is 1:15 (6%). All this has taken place with only light to moderate use. The many years of drought have had a profound effect on sagebrush populations, along with competition with winter annuals. On this site, bulbous bluegrass now makes up 50% of the total herbaceous cover. The trend for the herbaceous understory is up with notable increases in sum of nested frequency for the grasses which make up almost 90% of the herbaceous cover.

TREND ASSESSMENT

soil - slightly improved

browse - slightly down for the key browse, mountain big sagebrush

herbaceous understory - slightly up

HERBACEOUS TRENDS --

Herd unit 13A, Study no: 1

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover %	
		'87	'94	'99	'87	'94	'99	'94	'99
G	Agropyron cristatum	135	106	100	55	39	40	2.46	2.50
G	Agropyron intermedium	-	-	3	-	-	1	-	.03
G	Bouteloua gracilis	15	19	17	5	6	8	1.07	.14
G	Bromus inermis	75	67	63	31	27	26	.63	2.40
G	Bromus tectorum (a)	-	-	3	-	-	1	-	.00
G	Carex spp.	-	-	-	-	-	-	.00	-
G	Koeleria cristata	_b 61	_a 3	_a 19	23	1	8	.03	.18
G	Oryzopsis hymenoides	-	3	3	-	1	1	.00	.00
G	Poa bulbosa	_a 220	_b 256	_b 250	81	85	82	7.14	8.01
G	Poa fendleriana	_a -	_b 16	_c 53	-	7	21	.06	.38
G	Sitanion hystrix	_b 6	_{ab} 1	_a -	3	1	-	.00	-
G	Stipa comata	_b 48	_a 14	_{ab} 24	21	7	10	.11	.23

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover %	
		'87	'94	'99	'87	'94	'99	'94	'99
	Total for Annual Grasses	0	0	3	0	0	1	0	0.00
	Total for Perennial Grasses	560	485	532	219	174	197	11.52	13.89
	Total for Grasses	560	485	535	219	174	198	11.52	13.90
F	Astragalus convallarius	_b 40	_a 17	_{ab} 25	22	11	14	.10	.42
F	Castilleja chromosa	_c 38	_b 4	_a -	18	3	-	.01	-
F	Castilleja linariaefolia	-	2	1	-	2	1	.01	.03
F	Calochortus nuttallii	_b 8	_a -	_a -	3	-	-	-	-
F	Crepis acuminata	_b 14	_a 6	_a -	7	2	-	.03	-
F	Erigeron flagellaris	-	-	3	-	-	1	-	.15
F	Erigeron pumilus	_b 111	_a 21	_a 43	42	10	17	.07	.51
F	Eriogonum racemosum	_b 63	_a 30	_a 34	27	13	15	.14	.30
F	Hymenoxys acaulis	3	-	3	1	-	1	-	.00
F	Lomatium triternatum	_b 31	_a -	_a -	13	-	-	-	-
F	Lupinus argenteus	_c 162	_b 57	_a 20	64	24	9	3.64	.14
F	Machaeranthera canescens	1	-	2	1	-	2	-	.01
F	Penstemon caespitosus	_b 23	_a -	_a -	11	-	-	-	-
F	Penstemon spp.	_b 62	_a 2	_a 6	29	2	2	.01	.03
F	Petradoria pumila	_a -	_a -	_b 5	-	-	3	-	.06
F	Phlox longifolia	_b 67	_{ab} 53	_a 31	30	23	13	.14	.06
F	Senecio multilobatus	-	1	1	-	1	1	.00	.00
F	Sphaeralcea coccinea	58	55	52	27	29	24	1.24	.38
F	Tragopogon dubius	6	-	-	2	-	-	-	-
F	Trifolium gymnocarpon	-	3	3	-	1	1	.00	.00
F	Unknown forb-perennial	_b 6	_a -	_a -	3	-	-	-	-
F	Zigadenus paniculatus	-	-	3	-	-	1	-	.00
	Total for Annual Forbs	0	0	0	0	0	0	0	0
	Total for Perennial Forbs	693	251	232	300	121	105	5.43	2.15
	Total for Forbs	693	251	232	300	121	105	5.43	2.15

Values with different subscript letters are significantly different at $\alpha = 0.10$

BROWSE TRENDS --

Herd unit 13A, Study no: 1

Type	Species	Strip Frequency		Average Cover %	
		'04	'99	'04	'99
B	Amelanchier utahensis	18	18	2.25	3.74
B	Artemisia tridentata vaseyana	86	82	16.28	9.40
B	Chrysothamnus depressus	12	26	.66	.72
B	Chrysothamnus viscidiflorus viscidiflorus	86	80	3.62	4.96
B	Cowania mexicana stansburiana	0	1	-	-
B	Coleogyne ramosissima	0	0	-	-
B	Coryphantha vivipara arizonica	0	2	-	-
B	Eriogonum microthecum	10	16	.01	.53
B	Gutierrezia sarothrae	0	4	.01	.04
B	Opuntia spp.	36	35	.32	.56
B	Pinus edulis	0	16	2.92	3.53
B	Purshia tridentata	0	1	-	-
B	Quercus gambelii	0	3	.76	.63
B	Symphoricarpos oreophilus	3	2	-	-
Total for Browse		251	286	26.86	24.13

CANOPY COVER --

Herd unit 13A, Study no: 1

Species	Percent Cover '09
Amelanchier utahensis	.80
Pinus edulis	4

BASIC COVER --

Herd unit 13A, Study no: 1

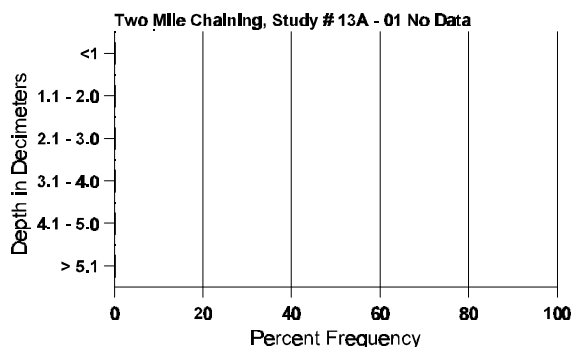
Cover Type	Nested Frequency		Average Cover %		
	'04	'99	'87	'94	'99
Vegetation	333	336	15.25	33.38	39.61
Rock	10	3	0	.02	.00
Pavement	18	22	0	.03	.04
Litter	387	345	61.00	46.05	40.37
Cryptogams	111	179	3.50	1.50	8.07
Bare Ground	301	265	20.25	32.20	29.56

SOIL ANALYSIS DATA --

Herd Unit 13A, Study # 01, Study Name: Two Mile Chaining

Effective rooting depth (cm)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
11.0	58.6 (11.7)	6.5	48.2	30.6	21.3	2.0	8.0	105.6	0.4

Stoniness Index



PELLET GROUP DATA --

Herd unit 13A, Study no: 1

Type	Quadrat Frequency		Pellet Transect Days Use/Acre (ha)
	04	09	
Rabbit	44	6	N/A
Elk	28	26	70 (173)
Deer	14	28	32 (79)
Cattle	-	2	6 (15)

BROWSE CHARACTERISTICS --

Herd unit 13A, Study no: 1

A Y G R E		Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Amelanchier utahensis																		
S	87	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
Y	87	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	94	6	-	-	3	-	-	-	-	-	9	-	-	-	180		9	
	99	2	2	-	-	-	1	-	-	-	5	-	-	-	100		5	
M	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	94	8	5	1	-	-	-	-	-	-	14	-	-	-	280	41	14	
	99	1	2	3	2	4	1	-	2	-	15	-	-	-	300	51	15	
D	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
	99	-	-	-	-	-	2	-	-	-	-	-	-	2	40		2	
X	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'87		00%			00%			00%			+86%							
'94		21%			04%			00%			- 8%							
'99		36%			32%			09%										
Total Plants/Acre (excluding Dead & Seedlings)												'87	66	Dec:	0%			
												'94	480		4%			
												'99	440		9%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Artemisia tridentata vaseyana																		
S	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	45	-	-	2	-	-	-	-	-	47	-	-	-	940		47	
	99	17	-	-	1	-	-	-	-	-	18	-	-	-	360		18	
Y	87	2	1	1	-	-	-	-	-	-	4	-	-	-	266		4	
	94	10	-	-	-	-	-	-	-	-	10	-	-	-	200		10	
	99	15	12	-	-	-	-	-	-	-	27	-	-	-	540		27	
M	87	20	15	3	-	-	-	-	-	-	37	-	1	-	2533	13	17	
	94	96	26	3	4	-	-	-	-	-	121	-	8	-	2580	18	32	
	99	76	48	1	2	1	1	-	-	-	128	-	1	-	2580	21	31	
D	87	2	4	-	-	-	-	-	-	-	6	-	-	-	400		6	
	94	94	4	2	1	-	-	-	-	-	85	-	3	13	2020		101	
	99	20	22	4	2	-	-	-	-	-	43	-	-	5	960		48	
X	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	120		6	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	280		14	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'87		42%			08%			02%			+33%							
'94		13%			02%			10%			-15%							
'99		41%			03%			03%										
Total Plants/Acre (excluding Dead & Seedlings)												'87	3199	Dec:	13%			
												'94	4800		42%			
												'99	4080		24%			
Chrysothamnus depressus																		
S	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	4	-	-	-	-	-	-	-	-	4	-	-	-	80		4	
	99	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
Y	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	5	-	-	-	-	-	-	-	-	5	-	-	-	100		5	
M	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	94	28	-	-	-	-	-	-	-	-	28	-	-	-	560	16	22	
	99	46	26	-	2	-	-	-	-	-	74	-	-	-	1480	4	9	
X	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'87		00%			00%			00%										
'94		00%			00%			00%			+65%							
'99		33%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'87	0	Dec:	-			
												'94	560		-			
												'99	1580		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Chrysothamnus viscidiflorus viscidiflorus																		
S	87	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	94	121	-	-	4	-	-	-	-	-	125	-	-	-	2500			125
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	87	23	-	-	-	-	-	-	-	-	22	-	1	-	1533			23
	94	12	-	-	-	-	-	-	-	-	12	-	-	-	240			12
	99	24	-	-	-	-	-	-	-	-	24	-	-	-	480			24
M	87	56	13	1	-	-	-	-	-	-	69	1	-	-	4666	5	8	70
	94	348	-	-	4	-	-	-	-	-	348	-	-	4	7040	9	20	352
	99	377	9	-	10	-	-	-	-	-	396	-	-	-	7920	5	10	396
D	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	94	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	99	2	1	-	1	-	-	-	-	-	3	-	-	1	80			4
X	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'87		14%			01%			01%			+15%							
'94		00%			00%			01%			+14%							
'99		02%			00%			.23%										
Total Plants/Acre (excluding Dead & Seedlings)												'87	6199	Dec:	0%			
												'94	7300		0%			
												'99	8480		1%			
Cowania mexicana stansburiana																		
M	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20	-	-	1
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'87		00%			00%			00%										
'94		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'87	0	Dec:	-			
												'94	0		-			
												'99	20		-			
Coleogyne ramosissima																		
M	87	1	-	-	-	-	-	-	-	-	1	-	-	-	66	11	4	1
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'87		00%			00%			00%										
'94		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'87	66	Dec:	-			
												'94	0		-			
												'99	0		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Coryphantha vivipara arizonica																		
M	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	99	3	-	-	-	-	-	-	-	-	3	-	-	-	60	3	5	3
% Plants Showing		<u>Moderate Use</u>				<u>Heavy Use</u>				<u>Poor Vigor</u>				<u>%Change</u>				
		'87				00%				00%				00%				
		'94				00%				00%				00%				
		'99				00%				00%				00%				
Total Plants/Acre (excluding Dead & Seedlings)												'87	0	Dec:	-			
												'94	0		-			
												'99	60		-			
Eriogonum microthecum																		
S	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	94	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
Y	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
M	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	94	14	-	-	-	-	-	-	-	-	14	-	-	-	280	8	8	14
	99	14	3	-	2	-	-	-	-	-	19	-	-	-	380	5	7	19
% Plants Showing		<u>Moderate Use</u>				<u>Heavy Use</u>				<u>Poor Vigor</u>				<u>%Change</u>				
		'87				00%				00%				00%				
		'94				00%				00%				+30%				
		'99				15%				00%				00%				
Total Plants/Acre (excluding Dead & Seedlings)												'87	0	Dec:	-			
												'94	280		-			
												'99	400		-			
Gutierrezia sarothrae																		
Y	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
M	87	1	-	-	-	-	-	-	-	-	1	-	-	-	66	8	6	1
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	7	9	0
	99	7	-	-	-	-	-	-	-	-	7	-	-	-	140	11	8	7
% Plants Showing		<u>Moderate Use</u>				<u>Heavy Use</u>				<u>Poor Vigor</u>				<u>%Change</u>				
		'87				00%				00%				00%				
		'94				00%				00%				00%				
		'99				00%				00%				00%				
Total Plants/Acre (excluding Dead & Seedlings)												'87	66	Dec:	-			
												'94	0		-			
												'99	160		-			

A G E	Y G R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Opuntia spp.																		
S	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	2	-	-	-	-	-	-	-	-	-	2	-	-	40		2	
	99	1	-	-	-	-	-	-	-	-	-	1	-	-	20		1	
Y	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	12	-	-	-	-	-	-	-	-	-	12	-	-	240		12	
	99	20	-	-	-	-	-	-	-	-	-	20	-	-	400		20	
M	87	3	-	-	-	-	-	-	-	-	-	1	-	2	200	3 6	3	
	94	49	2	-	-	-	-	-	-	-	-	46	-	5	1020	2 7	51	
	99	43	-	-	-	-	-	-	-	-	-	43	-	-	860	3 9	43	
D	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	11	-	-	-	-	-	-	-	-	-	11	-	-	220		11	
	99	3	-	-	-	-	-	-	-	-	-	3	-	-	60		3	
X	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'87		00%			00%			67%			+86%							
'94		03%			00%			07%			-11%							
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'87	200	Dec:	0%			
												'94	1480		15%			
												'99	1320		5%			
Pinus edulis																		
S	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	3	-	-	1	-	-	-	-	-	-	4	-	-	80		4	
Y	87	2	-	-	-	-	-	-	-	-	-	2	-	-	133		2	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	9	-	-	-	-	-	-	-	-	-	9	-	-	180		9	
M	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0	- -	0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	- -	0	
	99	6	-	-	-	-	-	-	2	-	-	8	-	-	160	- -	8	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'87		00%			00%			00%										
'94		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'87	133	Dec:	-			
												'94	0		-			
												'99	340		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Purshia tridentata																		
S	87	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	12	28	
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20	12	40	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'87		00%			00%			00%										
'94		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'87	0	Dec:	-			
												'94	0		-			
												'99	20		-			
Quercus gambelii																		
S	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	-	-	-	1	-	-	1	-	-	-	20		1	
Y	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
M	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	99	1	-	-	-	-	-	8	-	-	9	-	-	-	180	43	18	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'87		00%			00%			00%										
'94		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'87	0	Dec:	-			
												'94	0		-			
												'99	220		-			
Symphoricarpos oreophilus																		
S	87	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	1	-	-	-	-	-	1	-	-	-	20		1	
M	87	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	94	2	1	-	1	-	-	-	-	-	4	-	-	-	80	8	19	
	99	-	-	-	1	-	-	-	-	-	1	-	-	-	20	22	36	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'87		00%			00%			00%										
'94		25%			00%			00%			-50%							
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'87	0	Dec:	-			
												'94	80		-			
												'99	40		-			